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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,291	09/09/2005	Taketoshi Toyama	3796.P0047US	4471
23474 7590 11/14/2007 FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631				
EXAMINER				
WIESE, NOAH S				
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4116				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,291

Applicant(s)

TOYAMA ET AL.

Examiner

Noah S. Wiese

Art Unit

4116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/05/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Election Acknowledged

1. Applicant's election of claims 1-5 with traverse is noted. However, the argument that the search for the elected invention would necessarily entail a search for the unelected invention is unpersuasive. As evidenced by the prior art used in the rejections of the instant claims, the claims to the brazing composition are found in art that does not include limitations on the coating conditions. This indicates a different field of search. Therefore, the requirement for restriction is held and made FINAL. The claims 1-5 will be examined on merits.

Status of Application

2. The claims 1-10 are pending. Claims 1-5 have been elected with traverse and will be examined on merits. The non-elected claims 6-10 are withdrawn from consideration.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. PCT/JP03/07604.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Morley et al (WO 2001/038040).

Claim 1 is drawn to an aqueous aluminum brazing composition comprised of a flux, an organic binder, and a copolymer precipitation inhibitor.

Claim 2 further limits claim 1 by stating that the flux is a K-Zn-F-type zinc fluoride flux.

Morley et al teaches an aluminum brazing composition comprising a K-Zn-F-type flux (see page 2, lines 4-5) and a resin that can be a methacrylate/methacrylic acid copolymer (see page 2, lines 24-30).

Morley et al does not teach that the brazing composition includes 0.03-1.50 wt% of the copolymer, and also does not teach that the organic binder is a separate component from the copolymer. However, because neither the amount nor the specific type of organic binder is specified in instant application, the copolymer taught by Morley et al could function as both the organic binder and precipitation inhibitor. This is supported by applicant's assertion in the specification of instant application that the binder can be the methacrylate/methacrylic acid copolymer (see paragraphs 0042 and 0043). In the composition taught by Morley et al, 0.03-1.50 wt% of the copolymer would function as the precipitation inhibitor, while the balance of the copolymer would function as the organic binder. Because neither the amount nor the composition of the organic

binder is specified in instant application, the compositional limitations of claim 1 are met by Morley et al.

Although Morley et al does not teach the thixotropic index of the brazing composition according to the method of instant application, the brazing composition would inherently have this property because, as discussed above, the composition taught by Morley et al can meet the compositional limitations of instant application. Additionally, it is clear from the teachings of Hasegawa et al, discussed below, that viscosity is an important variable to the success of the brazing composition. Therefore, one of ordinary skill in the art would know to optimize the viscosity of a brazing composition taught by Morley et al. This optimization would cause the thixotropic index to fall within the limitations of claim 1. Therefore, the limitations of claims 1 and 2 are met, and the claims are anticipated by Morley et al.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. Claim 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al (US 6234381) in view of Morley et al (WO 2001/038040).

Claim 1 is drawn to an aqueous aluminum brazing composition comprised of a flux, an organic binder, and a copolymer precipitation inhibitor.

Hasegawa et al is drawn to a water-base binder and an aluminum brazing composition. The brazing composition comprises a flux (see claim 8) and a water-based organic binder that can be a copolymer of methacrylate and methacrylic acid (see claim 11).

Hasegawa et al does not teach that the brazing composition includes 0.03-1.50 wt% of the copolymer, and also does not teach that the organic binder is a separate component from the copolymer. However, because neither the amount nor the specific type of organic binder is specified in instant application, the copolymer taught by Hasegawa et al could function as both the organic binder and precipitation inhibitor. This is supported by applicant's assertion in the specification of instant application that the binder can be the methacrylate/methacrylic acid copolymer (see paragraphs 0042 and 0043). In the composition taught by Hasegawa et al, 0.03-1.50 wt% of the copolymer would function as the precipitation inhibitor, while the balance of the copolymer would function as the organic binder. Because neither the amount nor the composition of the organic binder is specified in instant application, the compositional limitations of claim 1 are met by Hasegawa et al.

Although Hasegawa et al does not teach the thixotropic index of the brazing composition according to the method of instant application, the brazing composition would inherently have this property because, as discussed above, the composition taught by Hasegawa et al can meet the compositional limitations of instant application. Additionally, it is clear from the teachings of Hasegawa et al that viscosity is an important variable to the success of the brazing composition. Therefore, one of ordinary skill in the art would know to optimize the viscosity of a brazing composition taught by Hasegawa et al. This optimization would cause the thixotropic index to fall within the limitations of claim 1.

Claim 2 further limits claim 1 by stating that the flux is a K-Zn-F-type zinc fluoride flux.

Hasegawa et al does not teach the use of this type of flux in the brazing composition.

Claim 3 further limits claim 1 by stating that the composition further includes silicon metal powder.

Hasegawa et al teaches that the brazing composition can contain silicon metal powder (see claim 9).

Claim 4 further limits claim 1 by stating that the composition further includes a reaction inhibitor.

Claim 5 further limits claim 4 by stating that the reaction inhibitor is an amino alcohol having a boiling point of 120-200°C.

Hasegawa et al teaches that the brazing composition can contain an amino alcohol (see column 5, lines 6-8). While Hasegawa et al does not teach the boiling point of the amino alcohol used, it would have been obvious to one of ordinary skill in the art to choose an amino alcohol with a boiling point between 120 and 200°C. Many amino alcohols have this property. Additionally, the alcohol would clearly need to have a boiling point below the drying temperature employed when coating an object with the brazing composition. Hasegawa teaches drying the brazing composition at 200°C (see column 5, lines 16-20). This would lead one of ordinary skill in the art to use an amino alcohol with a boiling point in the range of claim 5. Therefore, this limitation is taught by Hasegawa et al.

Claims 1-5 differ from Hasegawa et al because the Hasegawa et al does not teach that the flux used in the brazing composition is zinc-based flux, and more specifically K-Zn-F-type flux. However, it would have been obvious to one of ordinary skill in the art at the time the invention was filed to modify Hasegawa et al in view of Morley et al in order to make the composition taught by Hasegawa et al with a different type of flux.

As discussed above, Morley et al teaches a brazing composition comprising a K-Zn-F-type flux and a methacrylate/methacrylic acid copolymer. Because Hasegawa et al and Morley et al all teach brazing composition containing a flux and a methacrylate/methacrylic acid copolymer, it would have been obvious to one skilled in the art to substitute one type of flux for another equivalent flux to achieve the predictable results of producing a suitable brazing composition. In the instant case, it

would have been obvious to one skilled in the art to substitute K-Zn-F-type flux as taught by Morley et al for an equivalent flux such as fluoroaluminate flux as taught by Hasegawa et al. Because these are equivalent fluxes, it would be expected that equivalent results would be achieved by this substitution, and one would have expected reasonable success in such a modification. Therefore, claims 1-5 are obvious and not patentably distinct over the prior art of record.

Conclusion

8. No claim is allowed.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Noah S. Wiese whose telephone number is 571-270-3596. The examiner can normally be reached on Monday-Friday, 7:30am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Noah Wiese
November 5th, 2007
AU 4116

/Vickie Kim/
Supervisory Patent Examiner, Art Unit 4116